

## 2017 NATEF Correlation Chart

**MLR-** Maintenance & Light Repair

**AST-** Auto Service Technology (Includes MLR)

**MAST-** Master Auto Service Technology (Includes MLR and AST)

### AUTOMATIC TRANSMISSION AND TRANSAXLE (A2)

	Task	Priority	MLR	AST	MAST	Text Page #	Task Page #
<b>A. General: Transmission and Transaxle Diagnosis</b>							
1.	Identify and interpret transmission/transaxle concern, differentiate between engine performance and transmission/transaxle concerns; determine needed action.	P-1		✓	✓	187–204	34
2.	Research vehicle service information including fluid type, vehicle service history, service precautions, and technical service bulletins.	P-1	✓	✓	✓	20–21; 187–194	3, 4, 5, 17
3.	Diagnose fluid loss and condition concerns; determine needed action.	P-1	✓ Fluid condition and check for leaks only	✓	✓	188–192	35
4.	Check fluid level in a transmission or a transaxle equipped with a dip-stick.	P-1	✓	✓	✓	189	36
5.	Check fluid level in a transmission or a transaxle not equipped with a dip-stick.	P-1	✓	✓	✓	190	36
(5)	Identify drive train components, and configuration.	P-1	✓ (MLR only)			2-27; 53-105	1
	<b>Task</b>	<b>Priority</b>	<b>MLR</b>	<b>AST</b>	<b>MAST</b>	<b>Text</b>	<b>Task</b>

						Page #	Page #
6.	Perform pressure tests (including transmissions/transaxles equipped with electronic pressure control); determine needed action.	P-1			✓	201–203	37
7.	Diagnose noise and vibration concerns; determine needed action.	P-2			✓	187–188; 197–200	38
8.	Perform stall test; determine needed action.	P-2		✓	✓	60–61	12
9.	Perform lock-up converter system tests; determine needed action.	P-3		✓	✓	58–59; 193–196	13
10.	Diagnose transmission/transaxle gear reduction/multiplication concerns using driving, driven, and held member (power flow) principles.	P-1		✓	✓	70–76	39
11.	Diagnose electronic transmission/transaxle control systems using appropriate test equipment and service information.	P-1			✓	192–197	30
12.	Diagnose pressure concerns in a transmission using hydraulic principles (Pascal's Law).	P-2		✓	✓	30–36	10
<b>B. In-Vehicle Transmission/Transaxle Maintenance and Repair</b>							
1.	Inspect, adjust, and/or replace external manual valve shift linkage, transmission range sensor/switch, and/or park/neutral position switch.	P-1	✓	✓	✓	211–212	42
2.	Inspect for leakage; replace external seals, gaskets, and bushings.	P-2	✓	✓	✓	210–211	44; 56
(2)	Inspect for leakage at external seals, gaskets, and bushings.	P-1	✓ (MLR only)			210–211	30

	<b>Task</b>	<b>Priority</b>	<b>MLR</b>	<b>AST</b>	<b>MAST</b>	<b>Text Page #</b>	<b>Task Page #</b>
<b>3.</b>	Inspect, test, adjust, repair, and/or replace electrical/electronic components and circuits including computers, solenoids, sensors, relays, terminals, connectors, switches, and harnesses; perform demonstrated understanding of the relearn procedure.	P-1		✓	✓	134–144	42
<b>4.</b>	Drain and replace fluid and filter(s); use proper fluid type per manufacturer specification.	P-1	✓	✓	✓	208–209	41
<b>5.</b>	Inspect, replace and/or align powertrain mounts.	P-2	✓	✓	✓	212–213	40
<b>C. Off-Vehicle Transmission And Transaxle Repair</b>							
<b>1.</b>	Remove and reinstall transmission/transaxle and torque converter; inspect engine core plugs, rear crankshaft seal, dowel pins, dowel pin holes, and mounting surfaces.	P-2		✓	✓	221–222; 263–264;	45
<b>2.</b>	Inspect, leak test, flush and/or replace transmission/transaxle oil cooler, lines, and fittings.	P-1		✓	✓	207–210	43
<b>3.</b>	Inspect converter flex (drive) plate, converter attaching bolts, converter pilot, converter pump drive surfaces, converter end play, and crankshaft pilot bore.	P-2		✓	✓	61–63	14
<b>4.</b>	Describe the operational characteristics of a continuously variable transmission (CVT).	P-3	✓	✓	✓	166–175	32
<b>5.</b>	Describe the operational characteristics of a hybrid vehicle drive train.	P-3	✓	✓	✓	147–163	31

6.	Disassemble, clean, and inspect transmission/transaxle.	P-1			✓	223– 228	46
7.	Inspect, measure, clean, and replace valve body (includes surfaces, bores, springs, valves, switches, solenoids, sleeves, retainers, brackets, check valves/balls, screens, spacers, and gaskets).	P-2			✓	237– 242	55
8.	Inspect servo and accumulator bores, pistons, seals, pins, springs, and retainers; determine needed action.	P-2			✓	224– 225	57
9.	Assemble transmission/transaxle.	P-1			✓	246– 262	58
10.	Inspect, measure, and reseal oil pump assembly and components.	P-2			✓	253– 255	11
11.	Measure transmission/transaxle end play or preload; determine needed action	P-1			✓	260	59
12.	Inspect, measure, and/or replace thrust washers and bearings.	P-2			✓	246– 247	47
13.	Inspect oil delivery circuits, including seal rings, ring grooves, and sealing surface areas, feed pipes, orifices, and check valves/balls.	P-2			✓	250– 251	48
14.	Inspect bushings; determine needed action.	P-2			✓	246– 247	49
15.	Inspect and measure planetary gear assembly components; determine needed action.	P-2			✓	258– 259	50
16.	Inspect case bores, passages, bushings, vents, and mating surfaces; determine needed action.	P-2			✓	251– 253	51
17.	Diagnose and inspect transaxle drive, link chains, sprockets, gears, bearings, and bushings; perform needed action.	P-2			✓	226	52
18.	Inspect measure, repair, adjust or replace transaxle final drive components.	P-2			✓	260– 261	53

<b>19.</b>	Inspect clutch drum, piston, check-balls, springs, retainers, seals, friction plates, pressure plates, and bands; determine needed action.	P-2			✓	255– 257	54
<b>20.</b>	Measure clutch pack clearance; determine needed action.	P-1			✓	257	54
<b>21.</b>	Air test operation of clutch and servo assemblies.	P-1			✓	259	54
<b>22.</b>	Inspect one-way clutches, races, rollers, sprags, springs, cages, retainers; determine needed action.	P-2			✓	258	16